

The Claims

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1. A supportive device for helping physically handicapped patients shift from one structure such as a bed to other such as a supportive chair, comprising a chassis 4 having an open rear end, provided with a pair of front wheels 2 and a pair of rear wheels 3, a pillar 14 erected on the chassis 4, a pair of arms 31 provided in the pillar 14, a pair of thigh supports 32 provided in the arms 31, a handrail 46 whose rear end is open, a back upholstery 48, and a lifting device for raising and lowering the thigh supports 32, wherein the arms 31 are eccentrically rotated in accordance with the rotation of shafts 36 axially extending in front of the patient's knees, in the course of the rotation of the arms 31 the thigh supports 32 being inserted under the patient's thighs.

2. The supportive device according to claim 1, wherein the thigh supports 32 are capable of inclining.

3. The supportive device according to claim 1 or 2, further comprising a displacing device provided in the arms 31 whereby the thigh supports 32 are spaced at an adequate interval in accordance with the patient's size.

4. The supportive device according to claim 3, wherein the displacing device comprises a pair of brackets 34 provided in the pillar 14, a double bearing unit in which a first bearing 40 having an axial hole and a second bearing 41 having a traverse hole are intersected, a shaft 42 having a axial groove 42a, the shaft 42 being provided in the base portion of each of the arms 31, wherein the axis of each arm is inserted into the second bearing 41, the double bearing unit being secured in the grooves 42a, wherein a space S3 is

produced at a point where the shafts are mutually intersected, the arms 31 being rotatably from its upper position to its lower position, and when the arms 31 are raised upward, the respective thigh supports 32 are horizontally rotated so as to space one from the other at an adequate interval.

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5. The supportive device according to any of claims 1 to 4, further comprising a bag containing air or gas or liquid placed behind the thigh supports 32, the bag being elastically expanded behind the thigh supports when the lowering thigh supports 32 come into contact with a target structure such as a bed.

6. A supportive device for helping physically handicapped patients shift from one structure to another, comprising a chassis 104 whose rear end is open, a pillar 105 erected on the chassis 104, a pair of arms 106 provided in the pillar 105 through a rotary bearing 134 so as to allow the arms 106 to rotate from their upper position to their lower position, a pair of thigh supports 107 provided in the arms 106, a handrail 108 having an open rear end being provided above the thigh supports 107, an engaging means 145 provided midway the handrail 108, a back upholstery 146, and a lifting device 116 for raising and lowering the thigh supports 107 and the handrail 108, and wherein the rotary bearing 134 is made as a rotary boss 137 which includes a shaft vertically provided in the pillar 105 and a cylinder axially provided in the pillar 105, and the arms 106 being rotatably connected to the rotary boss, thereby ensuring that regardless of the position of the arms 106 upward or downward, the thigh supports 107 are maintained rotatable and are spaced at an adequate interval.

7. The supportive device according to claim 6, further comprising a bearing having a stopper at the front end of the thigh supports 107, an engager

provided integral with the arms 106 thereby to support the thigh supports 107, wherein the stopper is kept contact with the engager so as to allow the thigh supports 107 to rotate in a predetermined range with respect to the arms 106.

8. The supportive device according to claim 6 or 7, wherein the rotary bearing is inclined rearward.

9. The supportive device according to any of claims 6 ~~to~~^{or 7} 8, further comprising an automatic locking device for holding the arms 106 at a desired upper position.

10. The supportive device according to any of claims 6 ~~to~~^{or 7} 9, wherein the chassis comprises a front wheel provided on the undersurface of a footrest.

11. The supportive device according to any of claims 6 ~~to~~^{or 7} 10, wherein the engager is provided inside the handrail.

12. The supportive device according to claim 6, wherein the back upholstery 146 comprises a back portion made of such a solid and resilient material that the back upholstery 146 can be inserted between the patient and a structure like a supportive chair, and an engaging portion to be engaged by the engager integral with the arm.

13. The supportive device according to claim 6 or 12, wherein the back upholstery 146 has a plurality of engaging spots to be selected for engagement with the engager.

14. The supportive device according to claim 6, ~~12 or 13~~^{or 12}, wherein the back upholstery 146 comprises a three-dimensional back portion having a curved surface.

15. The supportive device according to any of claims 12 to 14, wherein the back upholstery 146 comprises a belt for preventing itself from slipping off.

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16. The supportive device according to any of claims 6 ^{and 7} ~~to 11~~, wherein the chassis 104 comprises an expander, and the lifting device is provided inside a sliding framework vertically slidable along a framework secured to the chassis 104, and a lever of the lifting device is provided with a mark toward the sliding framework, thereby ensuring that the height of the thigh supports 107 is adjusted by reference to the lever and the mark.

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